Clinical microbiological case: 'soap bubbles' in the cerebellum of an HIV-infected patient

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Please refer to the article on pages 419–420 of this issue to view the questions to which these answers refer.

CLINICAL OUTCOME

We decided to intensify antituberculous therapy and antiedema measures and discontinue therapy against toxoplasmosis.

Three months later, the patient was stable, and a new CT study showed partial resolution of the enhancing lesions (Figure 1). A positive PCR for *Mycobacterium tuberculosis* from tissue biopsy was confirmatory. A combination of isoniazid and rifampin was subsequently continued for 12 months. The patient was alive and doing well 19 months after the diagnosis of the cerebellar tuberculosis.

TEACHING POINTS

1. Despite the increasing frequency of tuberculosis in patients with HIV infection, cerebral tuberculosis is uncommonly reported (2–4%) [1,2]. Tuberculosis is one cause of central nervous system (CNS) complications that can present with non-specific symptoms and signs that make it indistinguishable from other opportunistic infections and neoplasms.
2. The differential diagnosis of parenchymal involvement of the cerebellum mainly includes *Nocardia* abscesses, cryptococcoma, tuberculomas or tuberculous abscesses, toxoplasmosis, and primary or metastatic lymphoma. Tuberculous abscesses are true pyogenic lesions, rarely present in AIDS patients. Severe symptoms (headache, focal signs, hydrocephalus) are frequently described.
3. Some authors have found that more than 50% of patients with tuberculous involvement of the CNS had a negative CT scan. Therefore, MRI has been considered to be superior, because of its higher sensitivity [3,4]. However, contrast-enhanced CT scanning is able to detect lesions such as those in this case, and its lower cost and easy access mean that it is still a valuable technique.
4. Previous cases of cerebral tuberculosis with multiloculated abscesses that had the appearance of 'soap bubbles' have been described [5,7]. Although hyperintense lesions, multiloculated patterns and hydrocephalus are unusual in toxoplasmosis, it is not possible to diagnose tuberculosis definitively on these grounds alone. We believe that the presence of 'soap bubble' lesions located in the CNS of AIDS patients, and clinical data such as that in this case, although not pathognomonic, are highly suggestive of CNS tuberculosis.

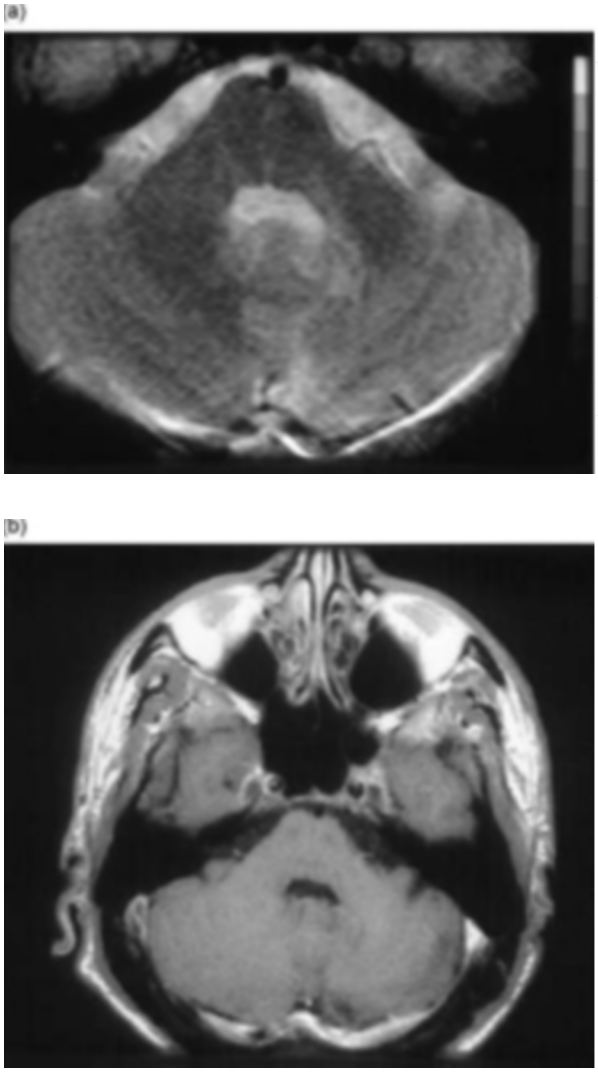

Figure 1 (a) Three months later, T2-weighted images show a hyperintense signal in the pathologic dentate area, without mass effect (enlarged and well shaped IV ventricle). (b) After gadolinium administration, there was no contrast medium in the same areas.

REFERENCES

1. Rieder HL, Snider DE, Cauthen GM. Extrapulmonary tuberculosis in the United States. *Am Rev Respir Dis* 1990; 141: 347–51.
2. Abós J, Graus F, Miró JM *et al*. Intracranial tuberculomas in the patients with AIDS. *AIDS* 1991; 5: 461–2.
3. Villoria MF, Fortea F, Moreno S, Muñoz L, Manero M, Benito C. MR imaging and CT of central nervous system tuberculosis in the patient with AIDS. *Radiol Clin North Am* 1995; 33: 805–20.
4. Bisburgh E, Sunderam G, Reichman LB, Kapila R. Central nervous system tuberculosis with the acquired immunodeficiency syndrome and its related complex. *Ann Intern Med* 1986; 105: 210–13.
5. Walot I, Miller BL, Chang L, Mehringer CM. Neuroimaging findings in patients with AIDS. *Clin Infect Dis* 1996; 22: 906–19.
6. Whiteman M, Espinoza L, Donovan Post J, Bell MD, Falcone S. Central nervous system tuberculosis in HIV-infected patients: clinical and radiographic findings. *Am J Neuroradiol* 1995; 16: 1319–27.
7. Lesprit P, Zagdanski AM, Blanchardiére A *et al*. Cerebral tuberculosis in the patients with AIDS. *Medicine* 1997; 76: 423–31.